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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,964

04/12/2007

Taishi Tsuji

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9940

23973

7590

05/25/2011

DRINKER BIDDLE & REATH
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EXAMINER

HANLEY, BRITT D

ART UNIT

PAPER NUMBER

2889

NOTIFICATION DATE

DELIVERY MODE

05/25/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DBRIPDocket@dbr.com
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Office Action Summary	Application No. 10/573,964	Applicant(s) TSUJI ET AL.	
	Examiner BRITT D. HANLEY	Art Unit 2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2 and 5-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

01 A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/19/2010 has been entered. Claims 1-2 and 5-7 are pending.

Response to Amendment

02 Kwong (US 2003/0054197 A1) was cited on an 892 on 2009 November 30. However, it does not appear that the 892 form was mailed with the office action. Accordingly, the examiner is re-citing the reference.

Claim Rejections - 35 USC § 103

03 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

04 The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

05 Claims 1-2 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over D1 (US 2003/0054197 A1) in view of D2 (Sato *et al.* "Operation Characteristics and Degradation of Organic Electroluminescent Devices").

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0.6 Regarding claim 1, Kwong discloses an organic electroluminescent device comprising: a pair of positive and negative electrodes opposed to each other (180 and 120, Figure 1, ¶ 25, 39-40); and an organic functional layer formed between the positive and negative electrodes and having three or more thin films each made of an organic compound (130, 140, 150, 160, 170, Figure 1, ¶ 25), wherein said organic functional layer comprises a hole transport layer (140), a hole injection layer (130), a light emitting layer (150), an electron transport layer (160), and an electron injection layer (170), as the thin films, wherein a first layer (130) and a second layer (150) within the thin films are made of organic compounds that have glass transition temperatures equal to or higher than a first temperature, wherein a third layer being made of an organic compound a glass transition temperature of which is lower than the first temperature (from Applicant's specification, CuPC $T_g \Rightarrow 300^\circ\text{C}$, NPD $T_g = 96^\circ\text{C}$, BAQ $T_g = 99^\circ\text{C}$, Alq3 $T_g = 167^\circ\text{C}$) and sandwiched directly between the first and second layers (Figure 1), wherein the light emitting layer includes a phosphorescent material as a doping material (BTPIr, ¶ 42-43).

0.7 D1 does not explicitly appear to disclose the first temperature is 107°C .

0.8 However, in the same field of OLEDs, D2 disclose a first layer of CuPc, a second layer of Alq3, and a third layer of NPD (CuPc/NPD/Alq3). According to Applicant, CuPC $T_g \Rightarrow 300^\circ\text{C}$, NPD $T_g = 96^\circ\text{C}$ and Alq3 $T_g = 167^\circ\text{C}$.

0.9 At the time the invention was made, it would have been obvious to a person having ordinary skill in the art having the references of D1 and D2 to include the high T_g emitting material Alq3 so that the EL device can operate at an elevated temperature (D2: ¶ 2, page 44)

1.0 Regarding claim 2, D1 and D2 disclose the organic electroluminescent device according to claim 1, wherein a difference between the glass transition temperature of an organic compound of the third layer and the glass transition temperature of an organic compound of the first or second layer is equal to or more than 12°C (D1: $|\text{NPD } T_g = 96^\circ\text{C} - \text{CuPC } T_g \Rightarrow 300^\circ\text{C}| \Rightarrow 12^\circ\text{C}$ & $|\text{NPD } T_g = 96^\circ\text{C} - \text{Alq3 } T_g = 167^\circ\text{C}| \Rightarrow 12^\circ\text{C}$).

1.1 Regarding claim 5, D1 and D2 disclose the organic electroluminescent device according to claim 1, wherein the third layer is a hole transport layer (D1: ¶ 25, D2: page 43, second column).

1.2 Regarding claim 6, Kwong disclose the organic electroluminescent device according to claim 5, wherein the hole transport layer is made of 4,4'-bis[N-(naphthyl)-N-phenyl-amino]biphenyl (¶ 9).

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1.3 Regarding claim 7, Kwong discloses the The organic electroluminescent device according to claim 1, wherein the phosphorescent material is one selected from substances represented by the following chemical formulae (D1: (4) represents BtpIr, D1 discloses in examples 3 and 4, ¶ 42 and 43, (6) represents Ir(ppy)₃, D1 discloses in par 40-41).

Response to Arguments

1.4 Applicant's arguments with respect to claims 1-2 and 5-7 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

1.5 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Britt Hanley whose telephone number is (571) 270-3042. The examiner can normally be reached on Monday - Thursday, 6:30a-5:00p ET.

1.6 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on (571)272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

1.7 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Britt Hanley/
Examiner, Art Unit 2889

|
/Toan Ton/
Supervisory Patent Examiner, Art Unit 2889